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BIOGRAPHY OF CAPT. JOHN COFFEIN.

Capt. John Coffein, the subject of this memoir and the first settler of the township of Cavendish in this state, was born at Topsfield in Massachusetts. His father Michael Coffein was a native of Ireland, and was descended from a wealthy and respectable family. At the age of sixteen while at college in Dublin, he was enticed on board a vessel bound to America, where he arrived, and at the age of twenty married and settled in Topsfield, where he lived, in easy circumstances, and reared a large family of Children. Of them, John, the subject of this memoir, was the eldest.

John Coffein early manifested a restless and enterprizing spirit, and a disposition to try his fortune at sea, and so propitious was this element, that he shortly became the master and owner of a coasting vessel. But his good fortune did not long continue. His vessel was driven upon a sand bar and lost, and he with difficulty escaped with his life. This misfortune cured his propensity for a sea faring life, and from this time he pursued his fortune by land. He now married a young lady, Miss Susanna Goldsmith, a native and resident of Boston, with whom he removed to Middletown in Connecticut, where he resided about four years. From Middletown he removed to Rindge, New Hampshire, where he remained about fourteen years; assisted in organizing the town, cleared up a new farm, and found himself in comfortable circumstances.

In 1768, to save part of a bad debt, he took a right of land in Vermont, then called the New Hampshire Grants, and resolved once more to try his fortune in the wilderness. Having disposed

of his property in Rindge in the latter part of the winter, he started for the Grants, with his family, two hired men, two horses, a pair of oxen, his household furniture, and provisions for one year.

When he arrived at No. 4, now Charleston N. H., he was unable to cross the Connecticut; but after being detained three weeks, he succeeded with some difficulty in getting over the river, and on the 8th day of May 1769, he arrived at the ten mile encampment, on the road leading from No. 4 to Crown Point. Being unable to proceed farther with his teams, he loaded one of his horses with provisions and the other with beds and clothing, and with his wife and eight children proceeded on foot nearly ten miles into a trackless wilderness to the spot, which was to be their future residence. Here they arrived about sunset, struck up a fire by the side of a log, near a spring of water, and here they passed the first night in Cavendish, with no other shelter than the trees of the forest and the star-decked heavens. The next day they succeeded in constructing a temporary cabin of poles and barks, and their little dwelling soon began to assume the appearance of comfort.

This family, for two years and three months, was the only family in Cavendish. A family by the name of Spafford, in Weathersfield, and eleven miles distant, were during this time their nearest neighbors. The snows during the winter fell much deeper in those early times, than they do at present, usually covering the ground for several months, to the depth of 6 or 7 feet. This family could therefore have but very little intercourse with the rest of the world, during the winter, and what they had was maintained by travelling upon snow shoes; and to enumerate all the privations and sufferings, which the family of Capt. Coffein experienced during the first 20 years of their residence in Cavendish, would far exceed the limits allowed for this article.

At the commencement of the revolution in 1775, there were seven families in Cavendish, but during the first year of the war, four of these families abandoned the township and went back into the more settled parts of the country. For the want of those bred to these professions, it fell to the lot of Capt. Coffein to officiate both as a minister of religion and a physician to the sick; and to the distance of nearly 30 miles around, he administered among the scattered settlers for many years to the comfort of soul and body. His residence being mid-way between Connecticut river and Otter

Creek, and on the road leading from No. 4 to Crown Point, his house was usually thronged with the weary, the sick, and the desponding.

In the month of March, 1771, Capt. Coffein visited a sick man near Otter Creek. On his return, while crossing one of the ponds in Plymouth, he fell through an air hole in the ice, which was covered with snow and was plunged into the water. Being encumbered by a large pair of snow shoes, upon which he had been obliged to travel on account of the depth of the snow, and with a great coat, he was utterly unable to extricate himself. He had struggled nearly half an hour, and in despair was about yielding himself to a watery grave, when, at this critical moment, his large and faithful dog, which was some rods in advance of Capt. Coffein, returned to his assistance. Seeing the perilous situation of his master, the dog at first set up a lamentable howl, and then advanced towards him. Capt. Coffein held with one hand upon the edge of the ice and reaching the other towards his dog, the intrepid animal seized the cuff of his coat and exerting all his strength, he succeeded, aided by the expiring efforts of Capt. C. in draging him from the watery chasm to a place of safety. It was about sunset when this took place, the weather was cold, and he was 7½ miles from home in an uninhabited and trackless wilderness; but with his wonted resolution, he pressed forward with none to aid or console him, but his faithful dog. Before he reached his home, he became so benumbed with cold, as to be unable to proceed; but he was fortunately so near home, that his anxious and listening family heard his cries for help and brought him in about ten o'clock, not only much chilled, but badly frozen.

At another time, in 1773, Capt. Coffein was overtaken by a violent snow storm, while returning from No. 4, and came very nigh perishing. The snow became so deep, that he found it impossible to travel through it, and there were no inhabitants on the way He however succeeded in reaching a small cabin, which had been erected the preceding summer by some choppers. The storm continuing, he remained at this place three nights and two days hoping his hired men would come upon snow shoes, as it was impossible to travel in any other way, to his relief; and during this time he was entirely without food. At length dispairing of succo r and seeing death approaching with rapidity, he resolved to make

one farther effort to save himself. He cut withes with his pocket knife, bent bows, and with the best twigs he could find, fabricated a substitute for snow shoes, and, having tied his handkerchief tightly round his waist, on the morning of the third day, started for his home, which he reached in safety, to the astonishment of all who were acquainted with the circumstances.

During the year 1777, only three families remained in Cavendish, and all these sustained considerable losses from the rapacity of the soldiery, which passed through the town, but as Capt. Coffein was upon the main road to the northern army, he suffered much more than the others. He had growing about 20 acres of grain, 25 acres of grass, and a thrifty young orchard, which had cost him much labor and expense. He had also procured materials for building a large barn and a house, the boards for which he had drawn from New Hampshire, and he might at this time be said to be in thriving circumstances. But this was to him a disastrous year. Three hundred New England troops were stationed upon his farm for some time, while opening the road to Crown Point; who destroyed his orchard and did much other injury. After the surrender of Crown Point and Ticonderoga to the British, the militia, whose time of service had expired, and those who were sent home by Gen. Schuyler for misconduct, passed through this town. They arrived at Capt. Coffeins in a severe storm. The house was immediately filled to overflowing, but was insufficient to hold all. Those, who could not get into the house, built fires out door with the boards and shingles, which Capt. C. had, with so much trouble, provided for his buildings. They moreover stripped the house of nearly every thing it contained, turned their horses into the meadows and grain fields, and justified themselves by declaring that the enemy would be there within 48 hours, and that what they did not take and destroy, the enemy would.

His hopes and prospects being thus blasted, Capt. C. sent off his family to Rindge, and during the remainder of the summer his farm was a common and his house a camp for the vagrant soldiery, several of whom died under its roof.

In 1778, Thomas Baldwin and Henry Proctor moved their families into Cavendish, and settled within half a mile of Capt. Coffein, and the satisfaction of this family in again having neighbors, with whom they could have intercourse, can be imagined only by those

who have passed through similar trials, and who have been, like them, for years cut off from a friendly intercourse with society. After the close of the war, the settlement of Cavendish advanced rapidly. Capt. Coffein first organized a military company in the town, was the first representative in the General Assembly, and held that office for several years. He reared a large family of children, many of whom partook of his own enterprizing and adventurous disposition, and became pioneers in the west, and he died respected and lamented, leaving a long line of descendants to mourn his departure.

From Belknap's American Biography.

BIRON.

The ancient inhabitants of Norway and Denmark, collectively taken, were distinguished by the name of NORMANS. Their situation near the coast of the sea, and the advantages which that element presented to them beyond all which they could expect from a rough soil, in a cold climate, led them at an early period to the science and practice of navigation. They built their vessels with the best of oak, and constructed them in such a manner as to encounter the storms and billows of the northern ocean. They covered them with decks and furnished them with high forecastles and sterns. They made use of sails as well as oars, and had learned to trim their sails to the wind, in almost any direction. In these arts, of building ships and of navigation, they were superior to the people bordering on the Mediterranean sea, who depended chiefly on their oars, and used sails only with a fair wind.

About the end of the eighth and beginning of the ninth century, the Normans made themselves famous by their predatory excursions. England, Scotland, Ireland, the Orkney and Shetland islands, were objects of their depredations; and, in one of their piratical expeditions, in the year 861, they discovered an island, which from its lofty mountains, covered with ice and snow, obtained the name of *Iceland*. In a few years after they planted a colony there, which was continually augmented by migrations from the neighboring countries. Within the space of thirty years, in the year 889, a new country, situate in the west, was discovered, and from its verdure during the summer months received the name of Greenland. This was deemed so important an acquisition, that, under the con-

duct of Eric Raude, or Redhead, a Danish chief, it was soon peopled.

The emigrants to these new regions were still inflamed with the adventure and passion for discovery. An Icelander of the name of Heriolf and his son Biron* made a voyage every year to different countries, for the sake of traffic. About the beginning of the 11th century, in the year 1001, their ships were separated by a storm. When Biron arrived in Norway, he heard that his father was gone to Greenland, and he resolved to follow him; but another storm drove him to the southwest, where he discovered a flat country, free from rocks, but covered with thick woods; and an island near the coast.

He made no longer stay at either of these places than till the storm abated; when by a northeast course he hasted to *Greenland*. The discovery was no sooner known there, than Leif the son of Eric, who, like his father, had a strong desire to acquire glory by adventures, equiped a vessel, carrying twenty five men; and, taking Biron for his pilot, sailed in the year 1002 in search of the new country.

His course was southwest. On the first land which he saw, he found nothing but flat rocks and ice, without any verdure. He therefore gave it the name of *Helleland*, which signifies rocky. Afterwards he came to a level shore, without any rocks, but overgrown with woods, and the sand was remarkably white. This he named *Markland*, or woody. Two days after, he saw land again, and an island laying before the northern coast of it. Here he first landed; and thence sailing westward, round a point of land, found a creek or river into which the ship entered.

On the banks of this river, were bushes bearing sweet berries; the air was mild, the soil fertile, and the river well stored with fish, among which were very fine salmon. At the head of this river was a lake, on the shore of which they resolved to pass the winter, and erected huts for their accommodation. One of their company, a German named Tryker, having straggled into the woods, found *grapes*; from which, he told them that in his country, they made *wine*. From this circumstance, Leif, the commander of the party, called the place *Winland dat gode*, the good wine country.

An intercourse being thus opened between Greenland and Winland, several voyages were made, and the new country was further

* His name is spelled by different authors Biron, Biorn, Bioern, and Biaern.

explored. Many islands were found near the coast, but not a human creature was seen till the third summer, in the year 1004, when three boats constructed with ribs of bone, fastened with thongs or twigs and covered with skins, each boat containing three men, made their appearance. From the diminutive size of these people the Normans denominated them *Skrælings*,* and inhumanly killed them all but one; who escaped and collected a larger number of his countrymen, to make an attack on their invaders. The Normans defended their ships with so much spirit, that the assailants were obliged to retire.

After this, a colony of Normans went and settled at Winland, carrying on a barter trade with the Skrælings for furs; but a controversy arose in the colony, which induced some to return to Greenland. The others dispersed and mixed with the Skrælings.

In the next century, in the year 1121, Eric, Bishop of Greenland, went to Winland, with a benevolent design to recover and convert his countrymen who had degenerated into savages. This prelate never returned to Greenland; nor was any thing more heard of Winland, for several centuries.

This account of the discovery of Winland is taken from Pontoppidan's history of Norway, Crantz's history of Greenland, and a late history of northern voyages by Dr. John Reinhold Forster. The facts are said to have been collected from "a great number of Icelandic manuscripts by Thormond Thorsœus, Adam von Bremen, Arngrim Jonas, and many other writers, so that it is hardly possible to entertain the least doubt concerning the authenticity of the relation."

Pontoppidan says, that "they could see the sun full six hours in the shortest day;" but Crantz tells us, that "the sun rose on the shortest day at eight of the clock," and Forster, that "the sun was eight hours above the horizon," from which he concludes, that Winland must be found in the 49th degree of northern latitude; and from its being in a southwesterly direction from Greenland, he supposes that it is either a part of Newfoundland or some place on the northern coast of the gulf of St. Lawrence; but whether grapes are found in either of those countries he cannot say. However, he seems so fully persuaded of the facts, that he gives it as his opinion, that the Normans were strictly speaking, the first discoverers of America, nearly five centuries before Columbus.

* Cut sticks, chips—Dwarfs.

From a careful perusal of the first accounts of Newfoundland, preserved by those painful collectors Hakluyt and Purchas, and of other memoirs respecting that island and the coast of Labrador; and from inspecting the most approved maps of those regions, the following observations occur.

On the N. E. part of Newfoundland, which is most directly accessible from Greenland, there is a long range of coast, in which are two bays, the one called Gander Bay, and the other the Bay of Exploits. Before the mouth of the former, among many smaller, there lies one large island called Fogo; and before the mouth of the latter, another, called The New World. Either of these will sufficiently answer to the situation described in the account of Biron's second voyage. Into each of these bays, runs a river, which has its head in a lake, and both these lakes lie in the 49th degree of north latitude.

The earliest accounts of Newfoundland after its discovery and the establishment of a fishery on its coasts, have respect chiefly to the lands about Trinity and Conception bays, between the parallels of 48 and 49 degs. These lands are represented as producing strawberries, whortleberries, raspberries, gooseberries, pears, wild cherries, and hazle nuts, in very great plenty. The rivers are said to have been well stored with salmon and trout. The natives, who inhabited a bay lying to the northward of Trinity and came occasionally thither in their canoes, are described as broad breasted and upright, with black eyes, and without beards: the hair on their heads was of different colors; some had black, some brown, and others yellow. In this variety they differed from the other savages of North America, who have uniformly black hair, unless it be grown grey with age.

The climate is represented as more mild in the winter than that of England; but much colder in the spring, by reason of the vast islands of ice which are driven into the bays or grounded on the banks.

On the north eastern coast of Labrador, between the latitudes of 53 and 56 degs., are many excellent harbors and islands. The seas are full of cod, the rivers abound with salmon; and the climate is said to be more mild than in the gulf of St. Lawrence.

Nothing is said in any of these accounts of vines or grapes, excepting that some which were brought from England had thriven

well. If any evidence can be drawn from a comparison between the countries of Newfoundland and New England it may be observed; that all the above mentioned fruit and berries are found in the northern and eastern parts of New England as far as Nova Scotia, in the latitudes of 44 and 45 degs.; and that grapes, *(vitis vulpina, vitis labrusca)* are known to grow wherever these fruits are found.

Du Monts in his voyage to Acadia, in 1608, speaks of grapes in several places; and they were in such plenty on the isle of Orleans in latitude 47 degs. that it was first called the island of Bacchus. Though there is no direct and positive testimony of grapes in the island of Newfoundland, it is by no means to be concluded that there were none. Nor is it improbable that grapes, though once found there, might have been so scarce, as not to merit notice, in such general descriptions, as were given by the first English adventurers.

The distance between Greenland and Newfoundland is not greater than between Iceland and Norway; and there could be no more difficulty in navigating the western than the eastern parts of the northern ocean, with such vessels as were then in use, and by such seamen as the Normans are said to have been; though they knew nothing of the magnetic needle.

Upon the whole, though we can come to no positive conclusion in a question of such remote antiquity; yet there are many circumstances to confirm, and none to disprove the relation given of the voyages of Biron. But if it be allowed that he is entitled to the honor of having discovered America before Columbus, yet this discovery cannot in the least detract from the merit of that celebrated navigator. For there is no reason to suppose, that Columbus had any knowledge of the Norman discoveries, which long before his time were forgotten, and would perhaps never have been recollected, if he had not, by the astonishing exertions of his genius and his persevering industry, effected a discovery of this continent, in a climate more friendly to the views of commercial adventurers.

Even Greenland itself, in the fifteenth century, was known to the Danes and Normans only by the name of *lost* Greenland; and they did not recover their knowledge of it, till after the English had ascertained its existence by their voyages to discover a northwest passage to the Pacific ocean, and the Dutch had coasted it in pursuit of whales.

From the First Book of the Fine and Useful Arts.

LITHOGRAPHIC PRINTS.

LITHOGRAPHY is the art of printing or taking impressions from stone. It was invented by Alois Senefelder, at Munich, about the year 1796. The father of Senefelder was an actor. It was his intention to have educated his son for the profession of law; but this did not suit his taste; and after his father's death, he attached himself to the theatre, and became an author. He was reduced in his circumstances; and being in search of some cheap way by which he might print his own works, he accidentally made the important discovery of this art. His mother requested him one day to make out a bill for washing clothes, and not having paper at hand, he wrote the list of articles on a stone which he had prepared for the purpose of etching. Some time after, when he was about to erase the writing, the thought occurred to him, that by preparing the stone with aqua-fortis, and applying printers ink to it, it might be possible to take impressions from it as from wood engravings. He tried this and several subsequent experiments, and the result was the art of lithography.

Senefelder at first made his discovery a secret; but in 1799, the King of Bavaria gave him an exclusive privilege to practice his new art for fifteen years, after which he made no exertion to keep a knowledge of it from the world.

The art was introduced into England about the year 1802, and into France in 1807, by M. Andre, a musical composer, who disposed of the secret to all who would purchase it for a given sum. His first attempts, however, at printing, were rather unsuccessful. Count Lasteyrie distinguished himself by his exertions to advance the art. He visited Germany for the purpose of acquiring information, and while there, he engaged a Mr. Engleman to study the art at Munich; after which, in conjunction with several other gentlemen, he set up a lithographic establishment in Germany. In 1816, Mr. Engleman opened a printing establishment in Paris, where he soon had six presses in operation. The art now assumed a considerable degree of importance, artists of ingenuity turned their attention to it, and daily improvements were made. Lithography was first successfully practised in America by Mr. William Pendleton, about the year 1824.

The stone used for lithographic drawing is a sort of calcareous

slate, composed of the carbonate of lime with a small portion of iron. The best stone is found in the vicinity of iron mines; it is usually of a bluish white color, and of fine grain.

The best lithographic stones are found at Solenhofen, a village upon the banks of the Danube. The country around abounds with them, and the place derives its greatest importance from this source of traffic. The stones are found at the depth of ten or fifteen feet from the surface of the earth, in horizontal strata of various thicknesses. They can be easily split to the proper thickness, which is about two or three inches. They should be entirely free from veins and crystals. The stone that is found in England, France and America, has not so fine a grain as that found in Germany, and therefore is inferior.

The stones are prepared for drawing by having their surfaces made smooth and uniform. The lines are drawn by the artist with a composition made of tallow, wax, shell-lac, common soap, and lamp-black, the usual proportion of which are—tallow, 2 oz.; shell-lac, 1 oz.; soap, 1½ oz.; and lamp-black, 1¼ oz. This composition, when undiluted, is formed into small rolls, and receives the name of crayon or graphic chalk. When diluted with water it is called lithographic ink, and in this form it is applied to the stone by means of steel pens or camel's hair pencils.

Drawings executed with the pen, are much the most durable, and many more impressions can be taken from them, than from those executed by means of the chalk.

It requires a good deal of skill in an artist to make a fine drawing on stone. The subject may be traced on the stone with red chalk or a lead pencil, but it must be done very lightly. When drawing, the artist must vary the pressure of the hand according to the tints which he wishes to obtain; or he may obtain any gradation of tint by varying the thickness of the lines or the distance at which they are placed from each other. A scraper is used to erase all errors and to procure lights.

When a drawing is finished, it is carried to the printer, who pours upon the stone diluted nitric acid, which produces a chemical change upon its surface, and discharges the alkali of the soap, which enters into the composition of the crayon and ink. This process is called etching. The stone is then covered with a solution of gum arabic, which fills up the pores, and prevents the ink from

spreading. Previous to printing, the stone is wet with water, which is absorbed by every part of it except that which has been touched by the composition, for grease will not unite with water, while all calcareous stones possess the property of imbibing fluids, except they be protected by oily substances. A roller is now charged with printing ink, and being made to pass over the stone, the ink readily adheres to the greasy lines of the drawing, but does not to those parts covered with water. The impressions are obtained in the same way as those from engravings. After each impression, it is necessary to wet the stone and apply the roller charged with ink.

It will be seen that the process of obtaining prints by lithographic engravings, is much less mechanical than any other mode, for it is founded upon a judicious application of chemical principles. The printer's ink being oily, readily unites with the oily composition which has been applied to the stone in drawing, while neither will unite with the water. These are the general principles upon which the art is founded. The number of impressions which can be taken from one lithographic drawing, when executed with the crayon, may vary from 500 to 1500, according to the fineness of the tints.

The art of lithography possesses many advantages over that of engraving. An engraving must be a copy, but a drawing on stone may receive many fine touches from the hand and skill of the artist. An impression from a copperplate can be transferred to stone by pressure, and then be printed in the same manner as if it had been originally drawn on the stone. The process of transferring an engraving to stone is extremely simple. The engraving must be laid with its surface upon water, until it becomes thoroughly wet, when it is taken and applied to the surface of the stone, which has been prepared in the usual manner. An equal pressure is now made by means of a roller, till the ink leaves the paper and adheres to the stone. The cheapness of lithographic prints brings them within the reach of all classes of society, and the works of authors which require embellishment, are by this art reduced in price.

The Spider.—It may not be generally known that the male spider is supplied with a little bladder, somewhat similar to a drum, and that ticking noise which has been termed the death watch, is nothing more than the sound he makes upon this little apparatus, in order to serenade and to allure *his mistress.—Colton.*

From Browne's Sylva Americana.

THE BUTTERNUT.

Juglans cathartica.

This species of walnut is known in the United States, under different denominations. In Massachusetts, New Hampshire and Vermont, it bears the name of *Oil Nut;* in Pennsylvania and Maryland and on the banks of the Ohio, it is generally known by that of *White Walnut;* in Connecticut, New York, New Jersey, Virginia, and the mountainous districts of the upper parts of the Carolinas, it is called *Butternut.* The last of these names we have adopted, because it is most generally used. This tree is found in the Canadas, in all of the New England States, New York, New Jersey, Kentucky, Tennessee and on the banks of the Missouri, and in the bottoms which border on the Ohio. It flourishes most abundantly in a cold unproductive soil, interspersed with large rocks, and on the steep, elevated banks of rivers.

In favorable situations this tree grows to the height of fifty or sixty feet with a circumference of ten or twelve feet, five feet from the ground. Its roots extend even with the surface of the earth, in a serpentine direction, and with little variation in size, to the distance of forty feet. The trunk ramifies at a small height, and the branches, seeking a direction more horizontal than those of other trees, and spreading widely, form a large and tufted head, which gives the tree a remarkable appearance. The bark of the secondary branches is smooth and grayish. The buds like those of the black walnut, are uncovered. In spring its vegetation is forward, and its leaves unfold a fortnight earlier than those of the hickories. Each leaf is composed of seven or eight pair of sessile leaflets, and terminated by a petiolated odd one. The leaflets are from two to three inches in length, lanceolate, serrate and slightly downy. The barren flowers stand on large cylindrical aments, which are single, four or five inches long, and attached to the shoots of the preceding year; the fertile flowers, on the contrary, come out on the shoots of the same spring, and are sitting at the extremity. The ovarium is crowned by two rose-colored stigmas. The fruit is commonly single,* and suspended by a thin, pliable peduncle, about three inches in length; its form is oblong-oval without any appearance of seam. It is often two and a half inches in length, and five inches in circumference, and is covered with a viscid ad-

* In Vermont it usually grows in bunches, or clusters. Ed.

hesive substance, composed of small transparent vesicles, which are easily discerned with the aid of a lens. The nuts are hard, oblong, rounded at the base, and terminated at the summit, in an acute point; the surface is very rough, and deeply and irregularly furrowed. They are ripe from the middle to the end of September, a fortnight earlier than the other species of walnut. The kernel is thick and oily, and soon becomes rancid; hence, doubtless are derived the names of *Oil Nut* and *Butternut.*

The black walnut and butternut, when young, resemble each other in their foliage, and in the rapidity of their growth; but when arrived at maturity, their forms are so different, as to be distinguishable at first sight. Remarkable peculiarities are also found, on examining their wood, especially when seasoned; the black walnut is heavy, strong, and of a dark brown color; while the butternut is light, of little strength, and of a reddish hue; but they possess in common, the great advantage of durability, and of being secure from the annoyance of worms. From its want of solidity and from the difficulty of procuring pieces of considerable length, the timber of the butternut is seldom used in the construction of houses. As it long resists the effects of heat and moisture, it is esteemed for the posts and rails of rural fence. For corn shovels and wooden dishes, it is preferred to the red-flowering maple, because it is lighter and less liable to split. In Vermont, it is used for the panels of coaches and chaises; the workmen find it excellently adapted to this object, not only from its lightness, but because it is not liable to split, and receives paint in a superior manner.

The medicinal properties of the butternut bark, have long since been proved, by several eminent physicians of the United States. An extract in water, or even a decoction sweetened with honey, is acknowledged to be one of the best cathartics afforded by *materia medica;* its purgative operation is always sure, and unattended, in the most delicate constitutions, with pain or irritation. Experience has shown that it produces the best effects in many cases of dysentary. It is commonly given in the form of pills, and to adults, in doses from half a dram to a dram. It is not however in general use, except in the country. It is obtained by boiling the bark entire in water, till the liquid is reduced by evaporation, to a thick, viscid substance, which is almost black. This is a faulty process; the exterior bark, or the dead part which covers the cellular integument, should first be taken off, for by continued boiling, it becomes

charged with four-fifths of the liquid, already enriched with extractive matter. This bark is also successfully employed as a revulsive, in inflammatory ophthalmias and in the tooth ache: a piece of it soaked in warm water, is applied in these cases to the back of the neck. In the country it is sometimes employed for dying wool of a dark brown color; but the bark of the black walnut is preferable. On a live tree, the cellular integument, when first exposed, is of a pure white, in a moment it changes to a beautiful lemon color, and soon after to a deep brown. If the trunk of this tree is pierced in the month which precedes the unfolding of the leaves, a pretty copious discharge ensues of sugary sap, from which by evaporation, sugar is slightly obtained inferior to that of the sugar maple.

POPULATION OF GREAT BRITAIN.

In the third number of the Repository, we gave an account of the recent census of England. The following table exhibits the results of the two last censuses for the United Kingdom of Great Britain.

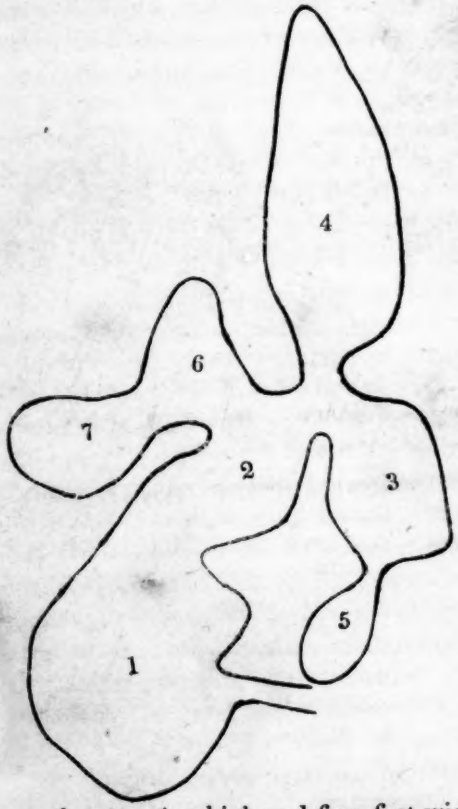
Districts, &c. England and Wales.	Total No. of Persons. 1821.	1831.	Ratio of Increase.
Mining Districts.	1,028,078	1,339,856	30 per cent.
Manufacturing Districts.	2,378,363	2,984,101	25¼
Metropolitan, &c.	2,904,266	3,463,288	19
Total,	6,310,707	7,787,245	23½
Inland Towns and Villages,	5,668,168	6,102,430	7¾
Total England and Wales,	11,978,875	13,889,675	16
Do. Scotland,	2,093,456	2,365,930	13
Great Britain,	14,072,331	16,255,607	15½
Army and Navy.	319,300	277,017	
Ireland,	6,802,093	7,734,365	13¾
Total United Kingdom,	21,193,724	24,266,898	14½

For the Green Mountain Repository.

PLYMOUTH CAVES.

These caverns were accidently discovered about the beginning of July in the year 1818. The editor visited and explored the largest of the two a few days after the discovery was made and furnished the first description of it, which was published shortly

after in the Vermont Jonrnal. These caverns soon attracted public attention, and were for a considerable time thronged by visitants. They are situated in the township of Plymouth, Vermont, near the head of Black river, and about 50 rods from that stream, on its southwestern side. They are at the base of a very large mountain, the land descending gradually towards the river, but rising rather steep in the opposite direction. The largest cave consists of seven different apartments and is rudely represented by the following diagram.



The passage into the cavern is about as large as a common well and descends nearly perpendicular about ten feet. It then opens into the side of a room of an oval figure, which is nearly 30 feet long, and about 20 feet broad in the widest part. The bottom of this room is very uneven, being made up of loose fragments of rocks. Over head is a passage, somewhat resembling the flue of a chimney, in which a person may ascend about 15 feet. Towards the north is a broad sloping passage into the *second* apartment, which is about two thirds as large as the first, and is very irregular in its form. From the second apartment are two passages one towards the north and the other towards the east. Proceeding eastward through an opening five feet high and four feet wide, you enter a *third* room, which is about 14 feet long, 8 broad, and seven high. To the north of this last, is a *fourth* room about 30 feet long, 12 broad and nearly 18 feet high. The rocks, which form the sides of this room, incline towards each other, and meet at the top like the ridge of a house. To the south of the third room is the *fifth* room, resem-

bling in form a common oven. The aperture is not larger than that of an oven, being barely sufficient to allow a common sized person to crawl through it. This room is about 10 feet in length 7 in breadth, and, in the middle, a little more than 4 feet in height. At the top of this room is a hole of a conical form, which extends into the rock about 2 feet: the diameter of its base is about 10 inches. Proceeding northward from the second room, you enter the *sixth*, which is 16 feet long, eight broad, and five high, with an opening towards the west into the *seventh* and last room, which is about the size of the sixth, together with an alley, which is about two feet wide and four high, and which extends about 16 feet into the rocks in a northerly direction and there terminates.

The distance from the entrance to the utmost extremity of the fourth room, is, by the nearest passage, about 100 feet. The bottom of the second room is the lowest part of the cavern, and is about 22 feet lower than the surface of the ground at the entrance. The bottom of this room is principally sand, while the bottoms of all the others are made, more or less, by rocks and stones. The limestone rocks, which form these caverns are very irregular, and the excavations were probably made by running water, which removed the loose earth from among the rocks and conveyed it to some other place. When discovered, the top and sides of these caverns were beautifully adorned by stalactites, while corresponding stalagmites, were scattered over the bottom. Many of the stalactites resembled icicles in their external form, but were hollow internally, forming a calcareous tube, frequently six inches long, with a hollow space one fourth of an inch in diameter. These were however soon broken from the rocks and carried off by the numerous visitants. The temperature of this cavern is very little affected by the changes in the temperature of the atmosphere without. Its temperature in summer and winter scarcely varies from 44½ degrees, which is the mean annual temperature of Vermont in that latitude. A few rods to the westward of the cavern just described, is another, which has five rooms, and is about two thirds as large as the former.

For the Green Mountain Repository.

BOTANY.

To explore the hidden recesses of nature, to call forth her latent treasures, and to convert them into antidotes to the pains and miseries of life, to trace the organization of the material world to an intelligent and designing Cause, and to learn from the works of his

hand, the wisdom and goodness of the Author of nature, are certainly among the noblest employments of a rational being. Surrounded, as he is, by an infinite variety of objects, which invite his attention and call forth the exercise of his faculties, man can ever find a scope for that employment of his corporeal and mental powers, which becomes his exalted destination. In the book of nature, which is laid open before him, and which he is invited to peruse by every motive of pleasure and advantage; he can read the character of its adorable Author, and at the same time derive instructions for the regulation of his conduct in life, and for the advancement of the happiness of his fellow beings.

Of the physical sciences, and especially of that important department comprehended under the name of natural history, botany constitutes a very distinguished branch. This science is recommended by the beauty and variety of its objects, the association of illustrious names, and by the discipline, which it gives to the mind, and which enables it to call forth its ideas from the chaos of perception, and to reduce them to order by referring them to distinct and appropriate classes.

Botany embraces the whole vegetable creation. It comprehends every variety "from the proud cedar of Lebanon to the humble moss, which invests the walls of Judea," from the mammoth adansonia and lofty palm of the tropical regions and the aerial pine of our own, to the meanest lichens, which cling upon our rocks, and the mould, which delights to vegetate in the damp atmosphere of our cellars. Like the other branches of natural science, botany is mostly the growth of modern times. Although it boasts an origin anterior to that of chemistry and electricity, it was not cultivated to any considerable extent until nearly the close of the seventeenth century. Theophrastus, the disciple of Aristotle, and several other distinguished philosophers of later times, had, it is true, applied themselves to this subject, with laudable diligence and considerable success. But this science was now to receive a fresh impulse from the genius and activity of Ray. By his own, and the labors of his predecessors, he was enabled to publish his general history of plants, which contained a description of about twenty thousand species. But Ray himself was destined soon to be eclipsed by the superior splendor of that luminary of science, which was then rising upon the world. Charles Linnæus appeared. The chaos of materials which had been accumulated by former botanists, was reduced to

order. The specific character of their different classes, orders and genera were pointed out. An artificial system of classification was devised, whose simplicity and beauty rendered this important science at once popular and inviting. Since the days of Linnæus, botany has been diligently and successfully cultivated. Each successive year has brought new and valuable accessions to her stock of materials. But the names of those who have distinguished themselves by their laudable researches, both in Europe and America, are too numerous to be mentioned.

But, notwithstanding the discoveries in botany have been prosecuted with so great success, that the science now embraces in its catalogue nearly fifty thousand species of plants, there are still ample fields for discovery. There are still many laurels reserved to crown the temples of the future botanist. Our forests still conceal treasures in their unexplored retreats. It is not improbable that our continent contains hundreds, and perhaps thousands of native plants, which have hitherto escaped the scrutinizing eye of the botanist. Even many parts of our own state have been but imperfectly explored. But we rejoice at the prospects of science! A spirit of enquiry is awake in our land. Laudable exertions have already been made to investigate the natural productions of our country. And from the efforts, which are now making, we can look forward with the most pleasing expectations to that scientific elevation, which our country is destined to hold among the nations of the earth.

Botany is a subject which is worthy the attention of all ranks of society. It enables the farmer to pursue his occupation with regularity and success. It will direct him in committing the different seeds to their appropriate soils, and will continually suggest improvements in the various departments of husbandry. It will direct him in the management of his orchards and vines, and an acquaintance with the sexual system of Linnæus, will enable him to guard against that degeneracy, which results from an interchange of pollen between the different species of plants of the same genus. An acquaintance with the organs of plants and their respective offices, will readily suggest the most proper method of cultivation. The form of the root will suggest the propriety of transplantation, the season for performing it, and the quality of the soil to which it should be committed. In short, no person can be a good farmer or an accomplished gardener, who is at the same time ignorant of the general principles of botany. [TO BE CONTINUED.]

METEOROLOGICAL

BURLINGTON, Vt., Lat. 44° 27′. Long. 73° 14′. Altitude above Lake

1832.		*Thermometer.*			*Barometer.*			RAIN	*Winds.*		
JUNE		S. R.	1 P.M.	9 EV.	S. R.	1 P.M.	9 EV.	Inch's	Morning.	Noon.	Evening.
1	6	45	71	60	29.35	29.05	29.00		S.	W.	N.
2	7	50	71	50	29.05	29.00	29.10		N.	N.	N.
3	G	45	60	52	29.10	29.00	29.10		N.	N.	N.
4	2	44	56	52	29.10	29.05	29.10		N.	N.	N. W.
5	3	49	61	52	29.10	29.05	29.20	.17	N.	N.	N.
6	4	45	56	53	29.25	29.20	29.20		N.	N.	N.
7	5	51	61	56	29.25	29.20	29.20	.02	N.	N.	N.
8	6	46	69	62	29.20	29.15	29.15		N.	N.W.	W.
9	7	58	71	56	29.20	29.15	29.10	.38	S′.	S. E.	S.
10	G	57	71	65	29.20	29.05	29.10		S.	S.	S.
11	2	60	78	70	29.15	29.00	28.95		S.	S.	S.
12	3	68	62	58	28.95	29.15	29.35		S.	N.	N.
13	4	48	71	63	29.45	29.30	29.30		N.	S.	S′.
14	5	60	78	70	29.20	28.95	28.80	.66	S′.	S.	S.
15	6	67	84	71	28.80	28.70	28.60	.05	S.	S.	S.
16	7	70	80	69	28.60	28.60	28.60		S′.	S.	N.
17	G	67	73	62	28.60	28.65	28.95	1.05	S.	W.	N.
18	2	54	54	46	29.00	29.00	29.00	.18	N.	N.	N.
19	3	46	52	48	29.20	29.35	29.50		N.	N. W.	N. W.
20	4	40	68	64	29.50	29.40	29.40		N.	N.	N.
21	5	48	77	68	29.60	29.30	29.20		N.	S.	S.
22	6	57	80	69	29.40	29.65	29.60		S.	S'	S.
23	7	56	75	62	29.20	29.05	29.20		S.	N.	N.
24	G	56	78	65	29.30	29.00	29.10		N.	N.	N.
25	2	58	87	65	29.10	28.85	28.95	.16	S.	S.	E.
26	3	68	85	73	29.00	28.75	28.70		S.	S.	S′.
27	4	65	79	65	28.70	28.70	28.65	.72	S.	S.	S.
28	5	62	65	61	28.80	29.05	29.20	.02	N.	N.	N.
29	6	53	72	62	29.40	29.30	29.30		N.	W.	N.
30	7	58	82	72	29.35	28.90	28.95		S.	S′.	S.
MEAN		51.6	70.9	61.3	29.10	29.03	29.06	3.41	Gen'l mean Ther. 61.3		

JOURNAL.

Champlain 250 feet. Distance from the Lake, one mile East.

D.	Weather. Morn.	Noon.	Even'g.	Remarks.
1	*Clear*	*Fair*	*Fair*	
2	*Clear*	*Fair*	*Clear*	
3	*Cloudy*	*Fair*	*Fair*	Apple trees in blossom.
4	*Cloudy*	*Cloudy*	*Fair*	
5	*Rain*	*Fair*	*Cloudy*	Foggy.
6	*Cloudy*	*Cloudy*	*Cloudy*	
7	*Rain*	*Fair*	*Clear*	Foggy.
8	*Fair*	*Fair*	*Fair*	Heavy Dew.—Smoky.
9	*Cloudy*	*Cloudy*	*Cloudy*	Thunder Showers.
10	*Cloudy*	*Fair*	*Fair*	
11	*Cloudy*	*Clear*	*Fair*	Smoky.
12	*Clear*	*Cloudy*	*Clear*	Smoky.
13	*Clear*	*Clear*	*Clear*	Heavy dew.
14	*Clear*	*Fair*	*Cloudy*	Thunder Showers.
15	*Cloudy*	*Fair*	*Rain*	3 P. M. Ther. 88 degs.
16	*Cloudy*	*Clear*	*Rain*	Thunder Showers.
17	*Clear*	*Clear*	*Clear*	
18	*Cloudy*	*Rain*	*Rain*	
19	*Fair*	*Cloudy*	*Fair*	
20	*Clear*	*Clear*	*Clear*	
21	*Clear*	*Clear*	*Clear*	
22	*Clear*	*Clear*	*Clear*	Locust trees in blossom.
23	*Clear*	*Clear*	*Clear*	Smoky.
24	*Clear*	*Clear*	*Clear*	
25	*Fair*	*Fair*	*Fair*	Thunder Shower.
26	*Clear*	*Clear*	*Cloudy*	Caterpillars left the appletrees.
27	*Rain*	*Fair*	*Fair*	Thunder.
28	*Fair*	*Fair*	*Clear*	Foggy morning.
29	*Fair*	*Clear*	*Clear*	Smoky. Aurora Borealis.
30	*Clear*	*Clear*	*Clear*	Vegetation very backward.

Barometer, 29.05 inches.

Additional Remarks.—By the preceding table it appears, that the mean temperature of June this year was 61.3, which is 8.7 degs. colder than June 1828, and 5.3 degs. colder than the mean of Doct. Saunders' observations. Range of the Thermometer, from 45 to 88 degs. equal 43 degs. Range of the Barometer from 28.60 to 29.60, equal to *one inch.* Caterpillars, which were uncommonly numerous and had devoured the leaves of fruit and other trees, mostly disappeared between the 20th and 30th of the month.

SOLUTION OF THE QUESTION IN NO. V.

1. Let *ab* represent the circumference of the pole, which is 9 inches, and *bc* the height of one foot, or 12 inches, then *ac* the diagonal will be the length of string required to go once round. Now as *abc* is a right angled triangle, $ab^2 + bc^2 = ac^2$, or $9 \times 9 + 12 \times 12 = 225$ and $\sqrt{225} = 15$ inches the length of *ac*. Then if one foot requires 15 inches of string, 100 feet will require $100 \times 15 = 1500$in.$=$ 125 feet, the whole length of the string.

2. *ab* : Rad. :: *bc* : Tang. *a*; then Rad. : Sec. *a* :: *ab* : *ac*, or Cosi. *a* : Rad. :: *ab* : *ac*, and having found *ac*, $ac \times 100 =$the answer. J. J.

Questions.—1. The front of a house is of such a height that a ladder of a certain length planted 12 feet from it, will just reach the top; but if it be planted 20 feet from the house, the top of the ladder will fall 4 feet below the top of the house; required the length of the ladder and height of the house? Q.

2. Being on the southerly part of Schuyler's island, I discovered the wharf at Port Douglas to be S. 79° W.—From this I passed on in the following courses and distances, to wit: N. 52 W. 11 chains; N. 77 W. 3.75 ch.; N. 36 W. 2 ch.; N. 5 W. 3.5 ch.; N. 29 W. 7.5 ch.; N. 4 W. 7.5 ch.; N. 26 E. 6.75 ch.; N. 51 E. 3 ch.; N. 31 E. 5 ch.; N. 5 E. 11.8 ch. Here I found the direction to the wharf aforesaid to be S. 63 W. What is the distance of the wharf from the first and last station? J. J.

Ambition.—No, say what we will, you may be sure that ambition is an error; its wear and tear of heart are never recompensed; it steals away the freshness of life; it deadens its vivid and social enjoyments; it shuts our soul to our own youth; and we are old ere we remember that we have made a fever and a labor of our raciest years.—*Bulwer.*

SUMMARY.

Scolds.—I never knew a scolding person that was able to govern a family. What makes people scold is because they cannot govern themselves. How then can they govern others? Those who govern well are generally calm.

Negative Love.—"I like a child that cries," said the Abbe Morello, in a new French publication: "Why." "Because then it will be taken away!"

Laws.—Make your laws to prevent crimes, and that will save the trouble of punishing them.

Women ought not to know their own wit, because they will be showing it, and so spoil it; like a child that will constantly be showing its new fine coat, till at length it all bedaubs it with its pap hands.

Horne Tooke used to say, that law, in his opinion, ought not to be a luxury for the rich, but a remedy, to be easily, speedily, and cheaply obtained by the poor. When told that the courts of justice "were open to all," he replied, "and so is the London Tavern, to such as can pay for the entertainment."

"Why don't you wheel the barrow of coals, Ned?" quoth a learned vender of black diamonds, to his man; "it is not a very hard job—there is an *inclined plane* to relieve you." "Aye, master," replied Ned, who had more relish for wit than work, "the *plane may be inclined*, but hang me if I am."

"How long will you stay in London?" said a friend meeting a student from the Oxford University. "Ten guineas," was the reply. This, though understood, does not seem so explicit as the observation of the honest hearted Frenchman in one of our Southern towns. A poor man having lost his cow, the whole support of his family, his neighbors very naturally sympathized with him in his loss, and a number met to condole with him, the benevolent foreigner among them. They all began to express their sorrow, when the Frenchman exclaimed, "You sorry, and you sorry, how much you sorry? I sorry ten dollars."

Mistake.—An Irish pig-merchant, who had more money in his pocket than his ragged appearance denoted, took an inside place in one of our stage-coaches. A dandy, who was a fellow-passenger, was much annoyed at the presence of Pat; and having missed his handkerchief, taxed him with having picked his pocket, threatening to have him taken before a magistrate at the next stage. Before they arrived there, however, the exquisite found his handkerchief, which he had deposited in his hat. He made an awkward kind of apology upon the occasion; but Pat stopped him short with this remark, "Make yourself aisy, darling, there's no occasion for any bother about the matter. You took me for a thief, and I took you for a genleman, and we are both mistaken, that's all honey.

Press in India.—The following statement of the number of periodical publications at the several Presidencies of Bengal, Fort William, and Bombay, in each year, for the years 1814, 1820, and 1830, exhibits a striking instance of the rapid march of periodical litarature in British India:—

European Publications.

	Bengal.	Fort St. George.	Bombay.
1814	1	5	4
1820	5	8	4
1830	32	8	12

Native Publications.

1814	none	none	none
1820	none	none	2
1830	8	none	4

POETICAL DEPARTMENT.

For the Green Mountain Repository.

TO J.... T.....

AN EXCUSE FOR DISCONTINUING A POETICAL CORRESPONDENCE.

One letter more, dear friend, to write
I seized my pen the other night,
And thought to ope to thee my mind
In numbers to thy taste refined.
I thoughtful sat—I scratched my head,
Besought my muse to lend her aid
And strove to wrest but strove in vain,
A vision from my tortured brain.
At length dispair aroused my ire,
I hurled my paper in the fire,
Corked up my ink—stamped on my pen,
—Because my Muse refused the rein.
Then, much disordered in my mind,
I sought my couch in hope to find,
(My senses locked by Somnus there)
A respite from the fiend, despair.
The fiend prevailed for many an hour
To thwart the drowsy monarch's power.
At length he yields—the drowsy god
Stretched out his sleep impelling rod,
And o'er my head his curtain drew,
—Veiled all realities from view.
Anon, that restless thing, the mind,
Which loves to wander unconfined,
Had borne me in her airy flight,
Through realms of darkness and of light,
Nor stopped till o'er Castalia's spring,
She hovered on bright fancy's wing—
That spring where Homer drank of yore
And Pindar sipped inspiring lore.
The far famed fount attracts my sight
The playful waters clear invite—
I stooped—I tasted—sipped again—
Its fumes inebriate my brain,
And make, like nitrous oxyde gas,
Wolds in review before me pass;
Light up my soul with flames anew
And paint new scenes to fancy's view.
Pegasus, decked in all his pride,
Stood ready harnessed by my side,
When lo! a thirst for fame returned,
New thoughts, new hopes within me burned,
And I resolved to attempt again
Heights I had thus far sought in vain.
I sipped again the inspiring fount;—
Anon the airy courser mount,
And bade the nag now upward rise
From murky to more brilliant skies.
He spreads his wings and moves intent
T' ascend Parnassus' steep ascent,
While I admire its tow'ring height—
Survey the prospect with delight,
And hope with little toil or pain
Its light encircled top to gain.
But ere I cropped a single flower,
Dark clouds around the mountain lower,
Pegasus falters on his way,
Nor curb, nor spur, nor whip obey,
But grown impatient of his load
And writhing 'neath the cruel goad,
He flounced—I from my seat was thrown—
And found myself in wilds alone,
Bewildered in an unknown way
Without the friendly light of day.
I pensive stood—a sound I heard—
Anon a messenger appeared,
Arrayed in shining robes complete,
In folds descending to his feet,
With comely mein and sprightly air,
With piercing eye and flowing hair—
He came—and with a restless look
Of wild impatience, thus he spoke.
"My name is Genius,—I have come
To warn thee of thy certain doom.
This mount is my peculiar care,
And though but few my fav'rites are,
A numerous throng my help disdain,
And strive alone its heights to gain;
But none without my timely aid,
Are ever for their toil repaid.
True some may rise, or seem to rise
Towards those serene etherial skies,
And hope at length a seat to gain
In yonder burnished dome of fame;
Yet borne before the gale of time,
Their courses towards the left decline,
And in oblivion's silent vale,
Where Lethe flows and dark clouds sail,
They soon descend—are lost from sight
Involved in everlastsng night.
"They, whom I aid, may, if they please,
Ascend the mount and go in with ease,
In yon bright temple on the right,
Where glory sheds a hallowed light,
A residence and that maintain,
In spite of time's enduring reign.
"Yet I have foes—have powerful foes,
Who in the way oft interpose,
And sometimes frustrate all my skill
And lead my fav'rites slaves at will.
Passions and habits often try,
And sometimes all my powers defy:
Yet idolence, more sure than they,
Leads victims from my ranks away.
"But they who seek, (and many they)
Without my aid to grope their way,
Are sure to end their rash career
In disappointment and despair.
"I much regret to find *thee* here;
Thou art not in thy proper sphere;
A place I ne'er designed thy name,
On the Parnassian list of fame;
Nor did I e'er thy breast inspire,
With poesy's etherial fire.
Retrace thy steps and be content—
Attempt no more this steep ascent;
Where thousands end th' ignoble race
And thousands yearly meet disgrace."
As thus he spoke the vision fled—
I found myself upon my bed—
I took the friendly hint—I rose,
Resolved henceforth to write in prose—
Resolved my fancy to restrain,
And never woo my Muse again. Q.